

REMARKS/ARGUMENTS

Claims 1-56 are currently pending in this application. Claims 23 and 55 are amended above to grammatically correct "establishment" to read "establish." These changes place the claims in better form for appeal and accordingly are properly entered after Final.

Withdrawal of Finality of Claim Rejections based on Newly Cited Art

All prior rejections have been withdrawn. New rejections are now made based on newly cited references Blakeney et al. and Tarallo that have been made Final. The withdrawal of the Finality of the action is respectfully requested since applicants prior amendments did not necessitate the new rejections.

The prior amendments clarified that all of the claims related to "duplex" wireless communications which is subject matter that was already implicit in the claims from the disclosure as well as explicit included in the claims such as claim 2 directed to a UTRAN. Moreover, the newly cited references are no more pertinent than the previously cited art as explained below. Accordingly, withdrawal of the Finality of the action is proper to advance the prosecution of this application.

Claim Rejections - 35 USC §103(a)

Claims 1,4, 6, 8-9, 12-13, 16, 20, 23, 26-28, 29, 31, 35-36, 39, 41, 43, 45, 48-49, 51 and 55-56 stand rejected under 35 USC §103(a) as being unpatentable over Blakeney et al. (newly cited US Patent No. 5267261) in view of Velazquez et al. (US Patent No. 6593880). Claims 2-3, 5, 10-11, 24-25, 27, 37-38 and 40 stand rejected under 35 USC §103(a) as being unpatentable over Blakeney et al. and Velazquez et al. in view of Bark et al. (US Patent No. 6445917). Claims 23, 35, 48 and 55 also stand rejected as being unpatentable over Farwell et al. (newly cited US Patent No. 5396541) in view of Tarallo (newly cited US Patent No. 5054035). These rejections are respectfully traversed.

The present invention is directed to methods and apparatus to establish a duplex wireless communication between a mobile unit and a network base station. Claim 1, for example, specifically states:

... a method for **establishing** wireless communication comprising:
...
directing a communication beam from the selected base station to the mobile unit to **establish** wireless communication.

Unlike the cited art, the claimed invention does not require the mobile unit to have an existing wireless communication with a base stations prior to the establishment of a wireless communication with that base station.

In accordance with the present claims, the mobile unit initiates the establishment of a wireless communication by transmitting "an omnidirectional sounding pulse" in a system where the base stations employ beamforming antennas. All base stations that detect the omnidirectional sounding pulse notify an interface. The interface selects one of the base stations that detected the sounding pulse to direct a beam toward the mobile unit to establish wireless communication.

Blakeney et al. is not analogous art because it is not directed toward the establishment of a wireless communication between a mobile station and a base station. Blakeney et al. is directed to soft handoff of a wireless communication of a mobile station from a first base station to a second base station (Base stations A and B, respectively, of Fig. 8). In Blakeney et al., the soft handoff procedures rely upon the existence of a wireless communication between a mobile station and a base station prior to handoff, as expressly explained in Column 26, lines 44-46 and step 200 of Fig. 8 of Blakeney et al.:

In FIG. 8, the blocks illustrated on the left hand side of the dashed line relate to the actions of a mobile station while the blocks on the right hand side of the dashed line indicate the actions of base stations A and B. **At the time a handoff is to begin the mobile station is communicating with another user via base station A and the MTSO, block 200.**

In Blakeney et al., the handoff procedures are such that the mobile unit temporarily maintains simultaneous wireless communications with a current base station and a

destination base station for the handoff. See, Blakeney et al. in Column 27, lines 7-12 and step 214:

The mobile station in response to this Handoff Direction Message begins to acquire the communications signals transmitted by base station B with diversity combining of the signals of base stations B and A, block 214. **The mobile station is thus communicating with the other user through both of base stations A and B.**

Examiner asserts that the mobile unit in Blakeney et al. transmits a message in a geographic coverage area of at least one base station, such that Examiner refers to the Pilot Strength Measurement Report Message transmitted to base stations A and B as described in Column 27, lines 23-24 and step 218:

The mobile unit continues travelling through the system, such as by leaving the coverage area of base station A and entering the coverage area of base station B. As the mobile station travels further into the coverage area of base station B the mobile station searcher receiver measures a signal strength of the Active pilot of base station A which has fallen, block 216. As discussed previously, **when the pilot of base station A drops below the threshold T.sub.-- DROP for a period of time determined by the parameter T.sub.-- TDROP, the mobile station generates and transmits a corresponding Pilot Strength Measurement Report Message to both bases stations A and B, block 218. One or both of base stations A and B should receive the Pilot Strength Measurement Report Message and transfer it on to the MTSO, block 220.**

This is not "an omnidirectional sounding pulse" as required by the present claims. The term "sounding pulse" has meaning in the art, see, for example, Freeburg (U.S. Patent 5,095,535) cited by the Examiner in applicants' co-pending Application No. 10/667,633 previously for which a terminal disclaimer over the present application has been made as noted in applicants' last Reply. The term is described in the present application as follows:

[0053] The sounding pulse is a physical signal that is preferably transmitted using an isotropic antenna, which is an antenna that radiates or receives equally in all directions. The form of the sounding pulse is preferably dependent on the radio access technology. For example, in CDMA-based systems, a very short duration burst spanning multiple chips, a short chip sequence, can represent the sounding pulse.

[0054] The timing for the sounding pulse depends on the implementation and realization of the physical signal, which depends on radio access technology. Each wireless communication medium requires a different pulse timing structure. For example, a FDD-CDMA sounding pulse would be different than a TDD-CDMA sounding pulse.

In Blakeney et al., the mobile station already has established wireless communication with base stations A and B (see Column 27, lines 7-12). Thus, the Pilot Strength Measurement Report Message taught by Blakeney et al. is directly transmitted to those base stations with which the mobile station already has established wireless communication links. The Pilot Strength Measurement Report Message is neither "a sounding pulse" nor is it a message used to establish a communication as required by the present claims. The Pilot Strength Measurement Report Message is used by the MTSO to determine when to terminate the wireless communication between the mobile unit and base station A, thus completing the soft handoff to base station B (Column 27, lines 29-47).

Blakeney et al. does not teach or suggest using the Pilot Strength Measurement Report Message to establish a wireless communication between a mobile unit and a base station as claimed. Accordingly, Blakeney et al.'s Pilot Strength Measurement Report Message transmitted over established wireless

communication links is not equivalent to an omnidirectional sounding pulse that is detected by base stations without prior wireless communication with the mobile unit for the purpose of establishing a wireless communication, as taught by the present invention.

Velazquez et al. discloses a wireless communication system employing directive antenna arrays at both base stations and mobile stations to reduce co-channel interference. Examiner asserts that Column 6, line 56 – Column 7, line 15 teaches a handoff method of a mobile unit between base stations such that the mobile unit and base stations use directive antennas. As explained above, a handover procedure implies the pre-existence of a wireless communication between a mobile unit and a base station and is simply not equivalent to the establishment of a wireless communication as per the present invention. Moreover, Velazquez et al. does not teach or suggest an omnidirectional sounding pulse transmitted by a mobile unit and detected by base stations for initiating mobile communication.

With respect to Farwell et al., Farwell et al. is not analogous art. Farwell et al. discloses methods and systems to handoff an wireless communication of a mobile unit from one base station to another (Column 3, lines 37-45 in Farwell). Farwell does not suggest or disclose initiating a wireless communication between a mobile unit and a base station using an omnidirectional sounding pulse as claimed.

As disclosed in Column 3, lines 36-40 of Farwell, Farwell teaches that the base station initiates hand off requests when signal strength drops below a threshold. This is opposite to the present claims in which the mobile unit initiates communication through the transmission of "an omnidirectional sounding pulse" and the base stations which detect the sounding pulse then communicate to the system interface.

Bark et al. discloses event-based or driven reporting of mobile station measurements to the network in a wireless communication system, and Tarallo teaches the evaluation of digital signal quality using synchronization patterns. Bark et al. and Tarallo do not disclose or suggest the features specified by the claims.

Claim 1, for example, requires:

a method for establishing wireless communication comprising:
transmitting an omnidirectional sounding pulse from a wireless mobile unit located in a geographic coverage area of at least one of the base stations;
communicating information related to the detected sounding pulse to the interface by each base station detecting the sounding pulse;
selecting a base station from among the base stations that detected the sounding pulse for mobile unit communication based on the communicated information; and
directing a communication beam from the selected base station to the mobile unit to establish wireless communication.

The features of claim 1 pertaining to an omnidirectional sounding pulse transmitted by a mobile unit for establishing wireless communication with a base station also appear in independent claims 23, 48 and 55. The prior art references

Blakeney et al., Velazquez et al. and Farwell et al. describe handoff procedures of existing wireless communications from one base station to another, and simply do not disclose or suggest the broadcast of "an omnidirectional sounding pulse" by a mobile unit to establish wireless communication with a base station. Furthermore, none of the prior art references teach or suggest an omnidirectional sounding pulse detectable by base stations that is not transmitted over an existing wireless communication channel. Thus, the prior art references do not teach or suggest the features of claims 1, 23, 48 and 55.

Based on the arguments presented above, withdrawal of the 35 USC § 103(a) rejection of claims 1, 23, 48 and 55 is respectfully requested. The remaining claims are dependent upon claims 1, 23, 48 and 55 and are, accordingly, also believed to be allowable.

Conclusion

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

Applicant: Cave et al.
Application No.: 10/626,165

In view of the foregoing amendment and remarks, Applicants respectfully request reconsideration, entry of the claim amendment, withdrawal of the Finality of the Action and allowance of claims 1-56.

Respectfully submitted,

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